

REMARKS

The Office Action of December 19, 2003 has been carefully considered and the following response prepared. Claims 6, 9, 10-11, 15-23, 31-62, 65-71 and 74-77 are pending in the application. Claims 10-11, 15-16, 21-22 and 31-59 are withdrawn from consideration as being drawn to non-elected inventions. Claims 60,66-69, 74 and 76 have been canceled without prejudice. New claims 78-80 have been added.

At page 3 of the Office Action, the Examiner objected to informalities in claims 9, 18, 71, 75 and 77. Claims 9, 18, 71, 75 and 77 have been amended as suggested by the Examiner.

At page 3 of the Office Action, the Examiner rejected claims 6, 17-20, 23, 25-26, 60-62, 65-71, 74 and 76 under 35 USC 112, first paragraph as not enabled. The basis for this rejection is that the specification does not reasonably provide guidance for nucleic acids encoding a cysteine-insensitive plant SATase other than SEQ ID NO: 2 or a cysteine-insensitive bacterial SATase other than that from *E. coli*, or for transit peptides comprising plant plastid transit peptides and N-terminal portions of mature plastid proteins other than OTP.

Applicants traverse this rejection. Prior to the filing date of the present application, SATs had been well-characterized in bacteria and plants, and a number of references to cloned bacterial and plant SATs are cited in the specification at pages 6 and 9. The Arabidopsis sequences disclosed in the specification were isolated from Arabidopsis by functional complementation of an *E. coli* strain deficient in SAT activity in accordance with the method described in Ruffet *et al.*, Eur. J. Biochem. 227: 500-509 (1995). See Examples 2, 5, 7 and 8 in the specification. In these examples, Ruffet *et al.* is disclosed as reference [12]. The full citation for Ruffet *et al.* is shown at page 6, lines 23-24. Examples 2 and 5 disclose the cysteine-insensitive SATs, SAT3 and SAT1', respectively. The functional complementation method can be used to obtain SAT from plants other than Arabidopsis and bacteria other than *E. coli*. In addition to Arabidopsis, the functional complementation method has been used to obtain a nucleotide sequence

encoding a cysteine-sensitive SAT from watermelon (Saito *et al.*, J. Biol. Chem. 270: 16321-16326 (1995)). The assay method disclosed in Example 1 can be used to determine the effect of cysteine upon SAT activity. The specification therefore enables nucleotide sequences encoding cysteine-insensitive SATs other than SEQ ID NO: 2 as well as SATs obtained from plants other than Arabidopsis and bacteria other than *E. coli*.

With regard to the transit peptide, the specification discloses suitable transit peptides at pages 13-15. Additionally, numerous plant transit peptides were known in the art at the time the present application was filed. See, for example, Heijne et al. Eur J. Biochem. 180: 535-545 (1989), a copy of which is submitted for the Examiner's attention. Applicants have thus enabled persons skilled in the art to practice the claimed invention using transit peptides other than OTP.

Withdrawal of this section 112, first paragraph is requested.

At paragraph 10 of the Office Action, the Examiner rejected claims 6, 17-20, 23, 25-26, 60-62, 65-71, 74 and 76 under 35 USC 112, first paragraph as failing to provide a written description of the invention. The basis for this rejection is that the specification describes nucleic acids encoding a plant insensitive-SAT from Arabidopsis, a cysteine-insensitive bacterial SAT from *E. coli* and the OTP transit peptide, but does not describe other DNA molecules encompassed by the claims and the structural features that distinguish all such nucleic acids from other nucleic acids are not provided, thus it is not clear that Applicant was in possession of the genus claimed at the time this application was filed.

Applicants traverse this rejection. In order to satisfy the written description requirement of 112, first paragraph, the Applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the "written description" inquiry, whatever is claimed. *Vas Cath Inc. v. Mahurkur* 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). One shows that one is "in possession" of the invention by such descriptive means as words, structures, figures, diagrams, formulas, etc. that fully set forth the claimed invention. *Lockwood v. American Airlines* 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

Applicants have provided sufficient written description of the invention for persons skilled in the art to practice the claimed invention. It is not necessary for the practice of the invention for the specification to set out other DNA molecules encompassed by the claims and the structural features that distinguish all such nucleic acids from other nucleic acids.

SAT is a well-characterized enzyme. The specification at pages 9 and 10 discloses that the SAT can be a cysteine-insensitive SAT such as SAT 3. Examples 5 and 6 disclose another cysteine-insensitive SAT, SAT1'. Persons skilled in the art can readily substitute any other cysteine-insensitive SAT for the ones disclosed in the specification by referring to the scientific literature and databases, which one skilled in the art would be led to do so because of the disclosure in the specification that any SAT is useful in the claimed methods.

Similarly, with regard to the transit peptide, it is not necessary for the practice of the invention for the specification to describe other DNA molecules encompassed by the claims or the structural features that distinguish all such nucleic acids from other nucleic acids. As discussed above, the specification discloses suitable transit peptides at pages 13-15. Additionally, numerous plant transit peptides were known in the art at the time the present application was filed. Thus, persons skilled in the art can select suitable transit peptides for use in the methods of the invention from those known in the art.

The specification provides sufficient written description for one skilled in the art to practice the claimed invention. Withdrawal of this section 112, first paragraph rejection is requested.

At paragraph 11 of the Office Action, the Examiner rejected claims 6, 9, 17-20, 23, 25-26, 60-71, and 74-77 under 35 USC 112, second paragraph as being indefinite. This rejection is repeated from the Office Action mailed April 29, 2003. The Examiner again indicated that it is not clear in claim 60 what the practitioner must do to overexpress SAT in plants or cells already transformed with a nucleic acid encoding SAT.

Applicants traverse this rejection. Claims 60, 74 and 76 have been canceled and replaced with new claims 78-80, respectively, which are directed to the type of method

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suggested by the Examiner in her remarks for this rejection. No new matter has been added. Withdrawal of this 112, second paragraph rejection is requested.

In view of the above, the present application is believed to be in a condition ready for allowance. Reconsideration of the application is respectfully requested and an early Notice of Allowance is earnestly solicited.

No fee is believed to be due. Please charge any fees that may be associated with the filing of this response to Deposit Account 03-2775.

Respectfully submitted,
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